

Abstract of the Disclosure

5 A system for optical interrogation of a sample
adaptable for multiple wavelength illumination and
multiple wavelength fluorescent or luminescent light
collection, wherein the illumination wavelength profile
and the light collection profile may overlap. In the
system, coherent light from one or more lasers is focused
10 onto a target layer on a sample to excite fluorescent or
luminescent light from the target layer. Emitted light
is collected from a selected depth by a reflective light
collector that transmits the collected light to detection
optics. The reflective light collector directs collected
light at an angle to the optical axis of the illumination
15 light, thereby separating collected emitted light from
illumination light. The light collector may collect
light from a focus, whereby the focused illumination
light combined with the focused light collection aid in
limitation of the depth of field to a selected depth.
20 Additionally, a spatial filter positioned between the
light collector and the detection optics may be used to
confine the depth of field to a selected depth. This
device may be incorporated into an optical scanner by
scanning of illumination light in a first direction and
25 translation of the sample in a tangent direction.
Alternatively, the illumination and detection optics may
remain stationary and the detectable targets moved past a
scanning location (e.g. as in electrophoretic analysis).